

REMARKS

After entry of the present Amendment, claims 1-10 and 21 remain in the application with claim 1 in independent form. Independent claim 1 has been amended and claim 21 has been added by the present Amendment. There is full support in the specification as originally filed for the amendment to claim 1 and for new claim 21.

The Applicant hereby affirms the election previously made relative to Group 1, claims 1-10. As such, claims 11-20 have been cancelled.

Claims 1-3, 5-6, and 8-10 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 6, 7, and 9-11 of copending Application No. 10/924,270. Although a Terminal Disclaimer has not been submitted in conjunction with the present Amendment, the Applicant is prepared to submit such a Terminal Disclaimer in the future upon an indication of allowable subject matter by the Examiner.

Claims 1-6 and 8-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Van Steenkiste et al. (United States Patent No. 6,283,386) in view of Kay et al. (US 2001/0042508, now issued as United States Patent No. 6,502,767). Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Van Steenkiste et al. in view of Kay et al. and further in view of Schwarz et al. (United States Patent No. 5,273,957).

In view of the amendment to independent claim 1, the method claims of the subject invention now require, among other elements, that the residence time and the temperature of the particles are increased as a result of the directing of the particles along the length of the powder/gas conditioning chamber. This particular length was already claimed in claim 1. Claim 1 has also been focused to make it further clear that the powder/gas conditioning chamber is different than the gas/powder exchange chamber, i.e., the two chambers cannot be the same.

Notably, the inventive significance of the use of the powder/gas conditioning chamber and its length equal to or greater than 20 millimeters (e.g. 240 millimeters) in addition to a system that only includes an exchange chamber going directly to a nozzle can easily be realized with reference to Figure 4 and Paragraph [0041]. Here, the increase in temperature of the particles due to the existence of the conditioning chamber can be

realized by comparing reference lines 100, 102, and 104 to reference lines 106, 108, and 110.

The prior art references, including Van Steenkiste et al. and Kay et al., alone or in combination, do not disclose, teach, or suggest the invention as now claimed.

On page 6 of the Office Action, the Examiner recognizes that Van Steenkiste et al. does not teach the length of the powder/gas conditioning chamber. Although the Examiner does not comment to this, it is also true that Van Steenkiste et al. does not disclose or teach particle temperatures and/or increase in particle temperatures as a result of the existence and particular length of the conditioning chamber. In contrast, every reference to elevated or increased temperatures in Van Steenkiste et al. refers to the temperature of the main gas, i.e., the supply gas and not the particles. There is no reference whatsoever in Van Steenkiste et al. to an increased temperature of the particles, let alone an increased temperature of the particles as a result of the length of any chamber in the apparatus of Van Steenkiste. In fact, the only reference in all of Van Steenkiste to the temperature of the particles is a brief reference generally emphasizing that the temperature of the particles is below the melting points of the particles so it is kinetic, and not thermal, spraying.

The exact same scenario holds true for Kay et al. That is, other than making it clear that its design and system are for a cold spray system, there is no reference whatsoever in all of Kay et al. to the temperature of the particles, let alone an increase in temperature due to a length of any chamber in the apparatus of Kay et al. In fact, in some of the sections relied upon by the Examiner relative to the fine tuning of performance characteristics of the system (e.g. Paragraphs [0016] and [0020]), it is clear that Kay et al. is only referencing the "temperature of the process gas" (emphasis added)...and not a temperature of the particles.

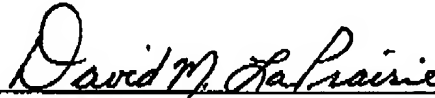
In view of the amendments to independent claim 1 and the clarifying remarks set forth above, it is respectfully submitted that the § 103(a) rejections of claims 1-10 are no longer at issue and that claims 1-10 and 21 are allowable. The Applicant respectfully requests such allowance.

The Commissioner is authorized to charge Deposit Account No. 08-2789 for any additional fees or credit the account for any overpayment.

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Date



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